

**Commonwealth of Kentucky**

**Division for Air Quality**

***PERMIT STATEMENT OF BASIS***

On the Title V Permit No. V-03-009 R5, Minor Revision

Jim Beam Brands Co.– Booker Noe Distillery

Boston, KY

October 26, 2006

Herbert Campbell, Reviewer

Source I.D. # 21-179-00014

Source A.I. # 3261

Activity I.D. # APE20070001

**CURRENT PERMITTING ACTION: --V-03-009 R5**

On October 26, 2006, the Division for Air Quality received an application from JIM BEAM BRANDS CO for a minor revision to their air quality permit, for the operation of a their Booker Noe facility at Boston, Kentucky. A thorough analysis was made of all relevant information available which pertains to this application, and the Division has concluded that the proposed operation will comply with all air quality regulations and requirements.

The minor revision includes the following;

- A new centrifuge for the evaporator process expansion
- A new tank for the barrel filling, aging and dumping
- A second beer still will be installed as part of the distillation process and the existing doubler will be replaced with a larger doubler
- A new lime silo will be added as part of the lime handling system that was installed as part of the May 23, 2005 minor Title V permit revision.

**SOURCE DESCRIPTION:**

The source is a distillery that makes distilled spirits. Grain is unloaded and conveyed to mills where it is ground. The grain is fed into mash cookers along with water, and the grain starches are converted to sugars by heating. The cooked grain/water mixture is fed into fermenter vessels as a batch operation to convert the sugars to ethanol. After an appropriate residence time, the mixture is processed through distillation columns and condensers. The condensed liquid is fed to spirits tanks and then gauged at the cistern tanks prior to barrel filling. The spent stillage is then dried with a dryer and put into a storage room. Whiskey from the cistern tanks is put into barrels until the appropriate age is reached. The barrels are then gravity dumped, rolled, and rinsed at the dumping station. After dumping, the whiskey is fed to the regauge tanks, where it may be processed and sent to be loaded for shipment.

**PREVIOUS PERMITTING ACTION: V-03-009 R4**

Jim Beam Brands Co. (JBB) has applied to the Kentucky Division for Air Quality for a significant revision of the Title V permit No. V-03-009 R3 for its Booker Noe Distillery located in Boston in Nelson County, Kentucky. The facility is proposing an overall source-wide limitation on Hazardous Air Pollutant (HAP) emissions to preclude the Maximum Achievability Control Technology (MACT) applicability of 40 CFR 63.7545(b), National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters. In order to "cap-out" of MACT the facility shall limit source-wide HAPs emissions to less than 9 tons per year for

any individual HAP pollutant and 22.5 tons per year for any combination of HAP pollutants. To achieve these limitations of this revision they propose to achieve the following objectives:

- 1) Cap Hazardous Air Pollutant (HAP), hydrochloric acid emissions (HCl) from the coal-fired boiler to less than 9.0 tons per year (tpy). HCl emissions generated by the coal-fired boiler is the primary source of HAP emission from the facility. As such, the emission limitation on the boiler will keep overall facility-wide emissions below applicable major source thresholds (25 tpy aggregate HAP and 10 tpy individual HAP). Moreover, this emissions limitation will also allow the facility to "cap-out" of the upcoming Maximum Achievable Control Technology (MACT) National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters of Title 40 of the Code of Federal Regulations (40 CFR 63.754(b)).
- 2) Modify the emissions monitoring language for opacity from the baghouse exhaust. As an alternative to the current monitoring requirements, the facility proposes to perform a qualitative visual observations of the opacity of emissions from the coal boiler/baghouse stack on a daily basis and maintain a log of such observations. If visible emissions are seen the permittee shall then assess the opacity of emissions by conducting a formal Reference Method 9 evaluation and initiate an inspection of the control equipment for potential repairs. It is noted that the current monitoring requirement is more stringent than that which was required prior to installation of the baghouse, and thus would appear to be overly restrictive and burdensome.
- 3) Modify the specific control equipment monitoring and maintenance requirement on the baghouse. JBB proposes to replace existing permit language with: "The baghouse shall be operated in such a manner as to maintain compliance with permitted emission limitations in accordance with manufacturer's specifications and /or standard operating practices."

#### **Regulation Applicability:**

##### **Emission Unit 09-001 Spreader stoker coal-fired indirect-heat-exchanger**

401 KAR 61:015 addresses applicable requirements and allowable emissions in the Title V permit and there are no changes due to this revision. Instead only a change to the existing limitations regulated by 401 KAR 52:020 will be to cap the HCl emissions to 9.0 tons/yr.

#### **Monitoring, Record Keeping and Reporting Requirements:**

##### **Emission Unit 09-001 Spreader stoker coal-fired indirect-heat-exchanger**

The monitoring, recordkeeping and reporting (MRR) requirements will have the additional requirement to monitor, record and report boiler HCl emissions on a monthly basis. Based on test information submitted to KYDAQ on Jan. 20, 2006 that relates HCl control to lime feed rate, this relationship and the monthly coal usage will be used to estimate monthly HCl emissions. These calculated monthly and 12-month rolling basis will be determined by the equation:

$$\text{Monthly HCl Emissions} = C \times 3.48(\text{lbHCl/ton coal}) \times [1 - (7e^{*} L^{**} - 0.02162 L^{***} + 2.3306 L^{****} - 5e^{*****}) / 100]$$

where \* = -5

\*\* = 3

\*\*\* = 2

\*\*\*\* = -12

C = coal usage (tons/month)

L = average lime feed rate (lb/hr)

For opacity monitoring from the coal boiler/baghouse stack the permittee shall perform a qualitative visual observation of the opacity of emissions from the stack on a daily basis and maintain a log of the observations. If any visible emissions are seen, then opacity must be determined by U.S. EPA Reference Method 9 and initiate an inspection of the control equipment for any necessary repairs.

For monitoring and maintenance requirements of the baghouse, the permittee shall monitor the baghouse differential pressure and temperature; and other representative operation parameters; and visible emission observations of the stack plume. The lime injection and baghouse systems shall be operated to maintain compliance with permitted emission limitations in accordance with manufacturer's specifications and/or standard operating practices.

#### **EMISSION AND OPERATING CAPS DESCRIPTION:**

The permittee (Jim Beam-Booker Noe Distillery), in order to preclude applicability of the Maximum Achievable Control Technology (MACT) for National Emission Standards Hazardous Air Pollutants (NESHAPS) for Industrial Commercial and Institutional Boilers and Process Heaters of 40 CFR 63.7545 (b), shall limit source wide HAPs emissions to less than 9 tons/year (tpy) for any individual HAP pollutant and 22.5 tons/year (tpy) for any combination of HAP pollutants. For Emissions Unit 09 (09-001) Indirect Heat Exchanger HCl emissions shall not exceed 9 tons/year.

#### **PUBLIC AND U.S. EPA REVIEW:**

The U.S. EPA was notified of the minor revision of the permit on November 15, 2006 via e-mail. The comment period expired 45 days from the date of e-mail. No comments were received during this period. The minor revision permit is now being issued.

#### **CREDIBLE EVIDENCE:**

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.